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LONDON EXHIBITION  
1851







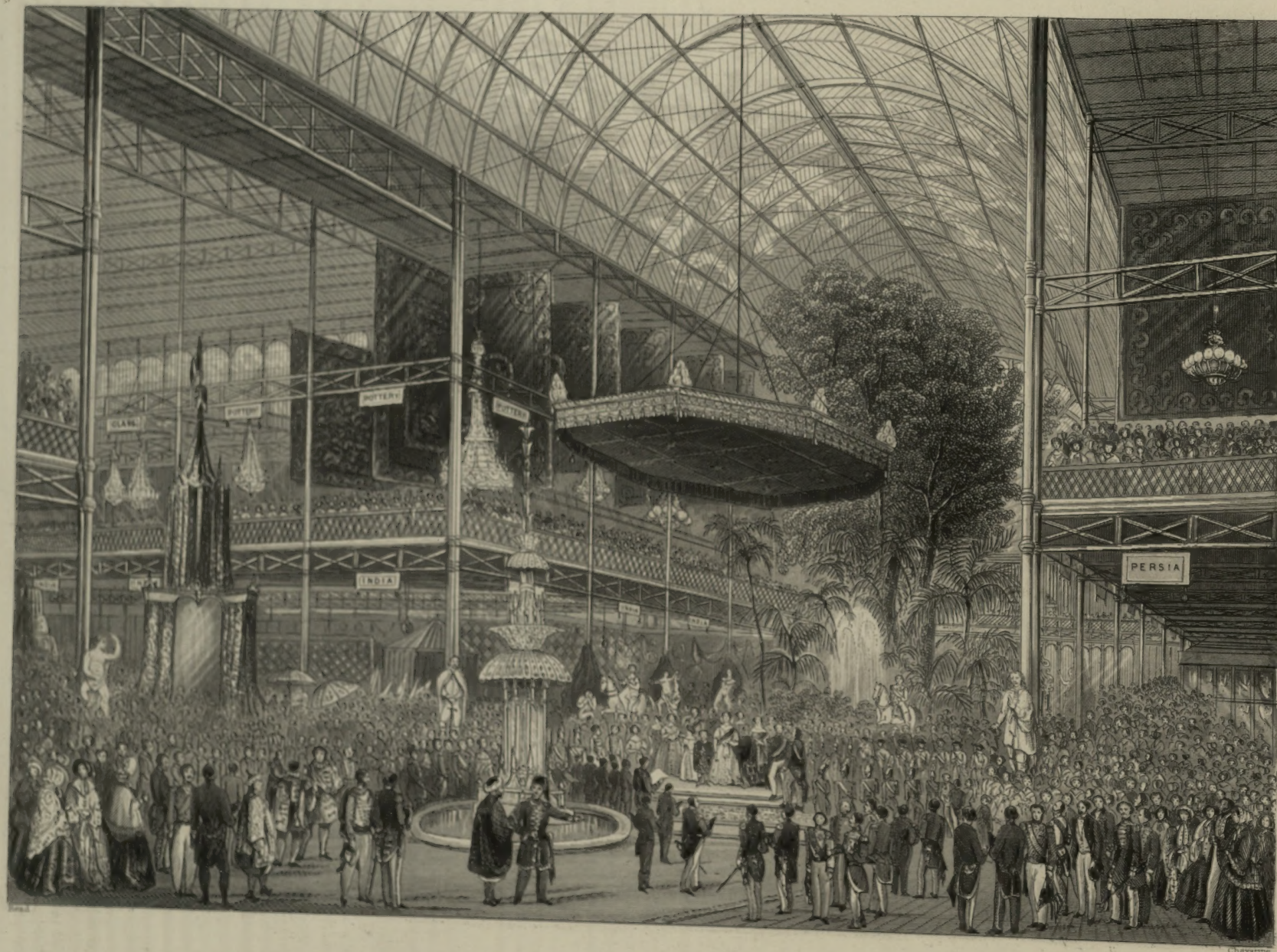
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EX. 1857. Oversize II









INTERIOR OF THE GREAT EXHIBITION.

No 10.

Grand State Opening, May 1, 1851.

Engraved for "Mighty London Illustrated" Read & Co 10, Johnson's Ct Fleet St



EXHIBITION

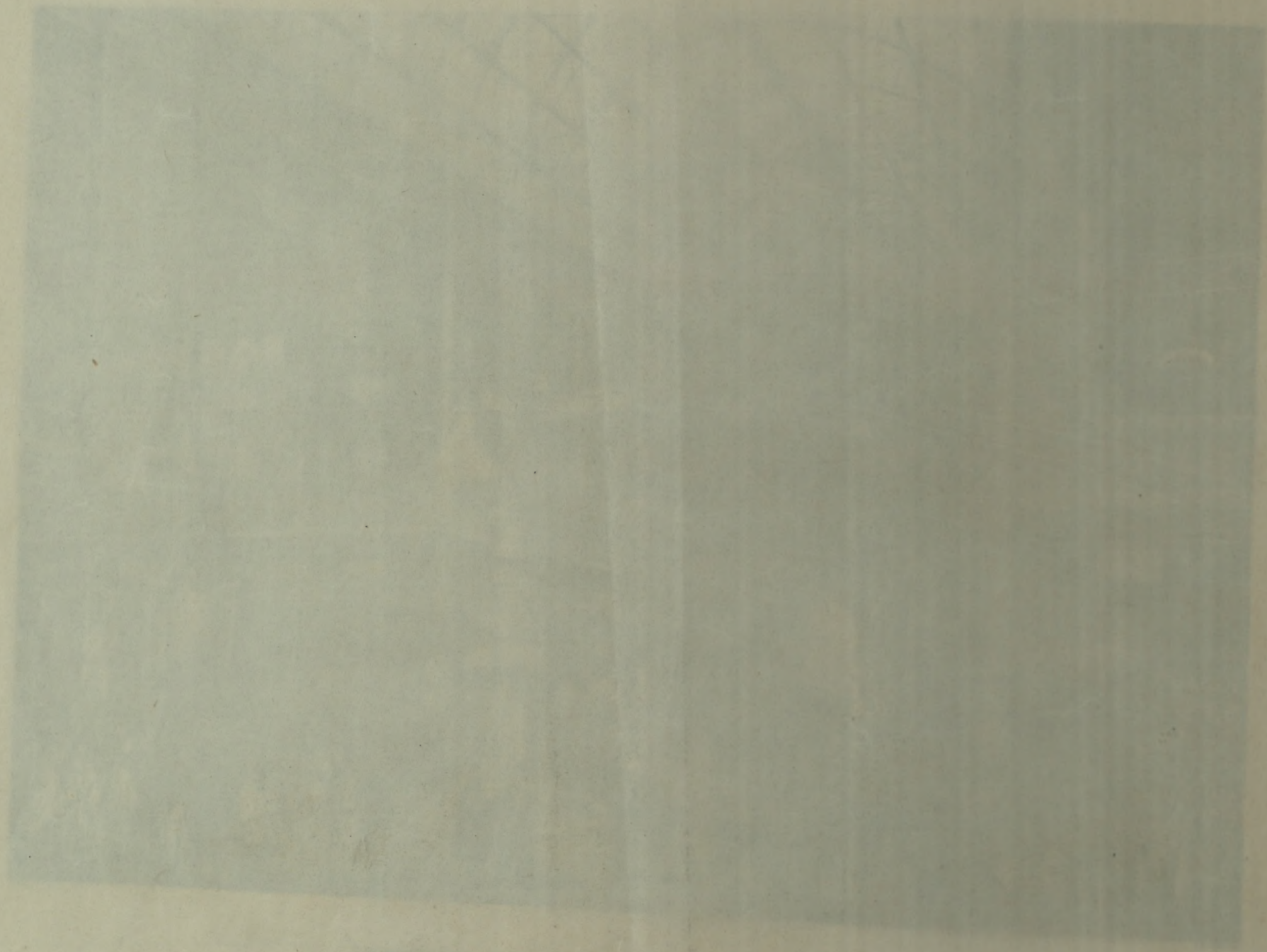
EXHIBITION

EXHIBITION

EXHIBITION



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OF

THE GREAT EXHIBITION.

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INCLUDING

A GENERAL HISTORY OF ITS ORIGIN, PROGRESS, AND CLOSE.



THE CRYSTAL PALACE.





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# THE GREAT EXHIBITION OF ALL NATIONS.

ITS

## ORIGIN, PROGRESS, AND CLOSE.

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This grand experiment—an Industrial Exhibition of all Nations—has now been tried, and has succeeded to an extent truly surprising, and far surpassing the most sanguine expectations of its projectors; indeed no enterprise of modern times affords a parallel with its extraordinary and gratifying results. Other countries have, at various periods, devised means for encouraging and displaying their own arts and manufactures, but no general or universal attempt had been made until England invited surrounding nations to bring their choicest specimens of art to her capital, and there, in a building not less marvellous than the contents afterwards deposited therein, afforded an arena for the display of the wonderful products of the world's industry; and entered into an amicable competition with them, the results of which have been proclaimed to the world by an impartial jury. The benefits this noble undertaking must eventually confer upon the industrial arts no reasonable person can for a moment doubt; and we trust it will tend to eradicate those prejudices and animosities which have so long unfortunately existed between nations, and in future produce feelings of peace and goodwill, which are the surest and most lasting guarantees for their prosperity.

We will now endeavour to give a brief outline of the circumstances which led to this grand undertaking; and we may mention in the outset that to the Society of Arts in London is the credit due for originating the idea of an Exhibition of such a character in this country. As far back as the year 1756-7 they offered prizes for specimens of manufactures, tapestry, carpets, porcelain, &c., and exhibited the works which were offered in competition; and about the same period the Royal Academy, presided over by Sir Joshua Reynolds, organised a plan for the exhibition of paintings, sculptures, and engravings. To France, however, must be ascribed the merit of having first commenced a system of exhibiting the works of industry and art on a plan nearest approaching that which has just closed in London. In the year 1797, the Marquis D'Aveze, then Commissioner to the Royal Manufactories of the Gobelins, of Sèvres, and of the Savonnerie, finding the warehouses filled with their choicest productions, and the workmen starving for want of employment, caused by the woeful neglect of these institutions, suggested to the government the idea of a public exhibition in Paris of the tapestry, china, and carpets of these establishments, and their disposal by way of lottery. Having gained their consent, with permission to convert the chateau of St. Cloud into a kind of bazaar for the purpose, he set himself manfully to work to prepare the apartments, and had so far succeeded as to fix a day for its opening, when in consequence of a decree of the Directory banishing the nobility from France, the whole undertaking fell to the ground, he being compelled amongst others to quit his country, and it was not till after his return the following year that his long-projected plan was carried into effect, which being highly successful the idea was adopted by the government, and the first grand official Exhibition took place on the Champ de Mars, the same spot on which had before been exhibited the magnificent collection of the spoils of Italy. Prizes were awarded on this occasion, and the comparative merits of the exhibitors decided by juries. The second exhibition did not take place, from



various political causes, till the year 1801, when a temporary building was erected in the quadrangle of the Louvre, and 200 exhibitors competed for the prizes. The third Exhibition took place on the same spot in 1802, when there were 600 competitors for the prizes, and again in 1806 when the exhibitors had increased to 1400, and the time for admission extended to 24 days. The disturbed state of France and the Continent prevented any further efforts of the kind being made till 1819, when another took place and continued open 35 days, the exhibitors having increased to 1700. The sixth exhibition occurred in 1825—the seventh in 1827—the eighth in 1834—the ninth in 1839—the tenth in 1844—the eleventh in 1849—when the number of exhibitors amounted to 4494. Other nations have had their industrial exhibitions, but they have not been attended with the same success as in France. Manchester, Leeds, Birmingham, Dublin, and other towns in the United Kingdom, have also held similar exhibitions, though they might, perhaps, with greater propriety be called Bazaars; the most important of which was that held in Covent Garden Theatre in 1845, and which remained open 12 days. In 1849, M. Buffet, the French Minister of Agriculture and Commerce, proposed an exhibition of the various products of the world, to be held in Paris, and the opinion of the French manufacturers was taken on the subject, but proving inimical to the purpose the plan was abandoned. However, the success which had attended the French Industrial Exhibitions, induced the Society of Arts in London to move the English government to favour or promote a somewhat similar exposition, but without success. In 1848, a proposal to establish an exhibition of English industry, of a self-supporting character, to be governed by a Royal Commission, was submitted by Prince Albert to the government, but without any advantage resulting therefrom, the Ministry in this case, as in others, being little inclined to act, or take any additional responsibility or trouble beyond what necessarily fell to their office. Popular feeling in favour of such an undertaking had, however, now begun to be general, and the early promoters of the measure being freed from all dependence on government for support, now began to act with spirit and decision, and substituted example for persuasion.

"In 1847" (we quote from the introduction to the Official Catalogue) "the Council of the Society substituted action for theory, and, in the midst of discouragement, established a limited exhibition of manufactures, professedly as a beginning of a series. The success of this exhibition determined the Council to persevere, and to hold similar exhibitions annually. Accordingly in the next year the experiment was repeated with such greatly increased success, that the Council felt warranted in announcing their intention of holding annual exhibitions, as a means of establishing a quinquennial Exhibition of British Industry, to be held in 1851. Having proceeded thus far, the Council sought to connect the Schools of Design, located in the centres of manufacturing industry, with the proposed exhibition, and obtained the promised co-operation of the Board of Trade, through the President, Mr. Labouchere; moreover, with a view to prepare a suitable building, they secured the promise of a site from the Earl of Carlisle, then Chief Commissioner of Woods and Forests, who offered either the central area of Somerset House, or some other government ground. In the year 1849, the exhibition, still more successful than any preceding, consisted chiefly of works in the precious metals, some of which were graciously contributed by her Majesty. To aid in carrying out their intention of holding a National Exhibition in the year 1851, the Council of the Society caused a report on the French Exposition, held in 1849, to be made for them and printed. A petition was also presented by the Council to the House of Commons, praying that they might have the use of some public building for the exhibition of 1851, which was referred to the Select Committee on the School of Design."

Prince Albert, being President of the Society of Arts, was fully aware of all the proceedings, and on the termination of the session of 1849, determined to take the subject under his own personal superintendence; and commenced arranging the way in which it should be conducted, in order to ensure a successful result. The outlines of the Exhibition were discussed on the 29th of June, 1849, from which period accurate accounts of the proceedings were printed and published. At a meeting held at Buckingham Palace, on the 30th of June, the minutes set forth:—His Royal Highness communicated his views regarding the formation of a Great Collection of Works of Industry and Art in London in 1851, for the purpose of exhibition, and of competition and encouragement; and was of opinion that such Collection and Exhibition should consist of the following divisions:—*Raw Materials—Machinery and Mechanical Inventions—Manufactures—Sculptures and Plastic Art generally.* It was a matter of consideration whether such divisions should be made subjects of simultaneous exhibition, or be taken separately. It was ultimately settled that, on the first occasion at least, they should be simultaneous. Various sites were suggested as most suitable for the building; which it was settled must be, on the first occasion at least, a temporary one. The Government had offered Somerset House; but as that did not suit, His Royal Highness pointed out the vacant ground in Hyde Park on the south side, between the Kensington drive and the road commonly called Rotten Row, as affording peculiar advantages. Application for this site could be made to the Crown. It was a question whether this Exhibition should be exclusively limited to British industry. It was considered that, whilst it appears an error to fix any limitation to the productions of machinery, science, and taste, which are of no country, but belong as a whole to the civilised world, particular advantage to British industry might be derived from placing it in fair competition with that of other nations. It was further settled that, by offering large premiums in money, the effort necessary for their accomplishment, permanently raise the powers of production, and improve the character of the manufacture itself.\* After another meeting on the 14th of July at Osborne House, the Prince brought the subject officially before Government, in a letter to the Home Secretary, which led to the appointment of a Royal Commission, dated Jan. 3, 1850.

\* The Commissioners revised their original intention of giving large prizes in money, and determined in lieu to give medals, three designs for which were required, and artists of all countries were invited by advertisement to the competition. No less than 129 designs were then offered, and exhibited in the rooms of the Society of Arts. The three principal prizes of £100 each were awarded—the 1st to Hyppolyte Bonnardel, of Paris; the 2nd to Leonard C. Wyon, of London; and the 3rd to G. G. Adams, of London. The second prizes of £50 each were awarded—the 1st to John Hancock, of London; the 2nd to L. Wrener, of Brussels; and the 3rd to M. Gayard, of Paris.





THE CRYSTAL PALACE.

From the Serpentine.

Engraved for "Mighty London Illustrated" Read & Co 10, Johnson's L<sup>d</sup> Fleet St









INTERIOR OF THE GREAT EXHIBITION.

No 2.

North Transept.

Engraved for "Mighty London Illustrated" Read & Co 10, Johnson's Ct Fleet St







"In this stage of the proceeding," (we quote again from Mr. Cole's Introduction,) "it became necessary to place the accomplishment of the undertaking, as far as possible, beyond a doubt. Having acquired experience, in 1845, of the difficulties to be encountered, the Council of the Society of Arts felt that the proposal must not be brought a second time before the public as an hypothesis, but that the only means of succeeding was to prove that they had both the will and the power to carry out the Exhibition. The Society had no funds of its own available for the advances necessary to be made. The outlay for a building upon the scale then thought of, and for preliminary expenses, was estimated at the least £70,000

"After much fruitless negotiation with several builders and contractors, an agreement was made between the Society of Arts and the Messrs. Munday, by which the latter undertook to deposit £20,000 as a prize fund, to erect a suitable building, to find offices, to advance the money requisite for all preliminary expenses, and to take the whole risk of loss on certain conditions. It was proposed that the receipts arising from the Exhibition should be dealt with as follows:—The £20,000 prize fund, the cost of the building, and five per cent. on all advances, were to be repaid in the first instance: the residue was then to be divided into three equal parts; one part was to be paid at once to the Society of Arts as a fund for future exhibitions; out of the other two parts all other incidental costs, such as those of general management, preliminary expenses, &c., were to be paid; and the residue, if any, was to be the remuneration of the contractors, for their outlay, trouble, and risk. Subsequently, the contractors agreed, that instead of this division they would be content to receive such part of the surplus, if any, as after payment of all expenses, might be awarded by arbitration. This contract was made on 23rd August, 1849, but the deeds were not signed until the 7th November.

"For the purpose of carrying the contract into execution on behalf of the society, the Council nominated an Executive Committee of four members, who were afterwards appointed the Executive in the Royal Commission, and the Contractors their own nominee. In thus making the contract with private parties for the execution of what, in fact, would become a national object, if the proposal should be entertained by the public, every care was taken to anticipate the public wishes, and to provide for the public interests. It was foreseen that if the public identified itself with the Exhibition, they would certainly prefer not to be indebted to private enterprise and capital for carrying it out. A provision was made with the contractors to meet this probability, by which it was agreed, that if the Treasury were willing to take the place of the contractors, and pay the liabilities incurred, the Society of Arts should have the power of determining the contract before the 1st of Feb. 1850. In the event of an exercise of this power, the compensation to be paid to the Messrs. Munday for their outlay and risk was to be settled by arbitration.

"The Society of Arts having thus secured the performance of the pecuniary part of the undertaking, the next step taken was to ascertain the readiness of the public to promote the Exhibition. It has been shown that the proof of this readiness would materially influence her Majesty's government in consenting to the proposal to issue a Royal Commission to superintend the Exhibition. Prince Albert, as President of the Society of Arts, therefore commissioned several members of the Society, in the Autumn of 1849, to proceed to the 'manufacturing districts of the country, in order to collect the opinions of the leading manufacturers, and further evidence with reference to a great Exhibition of the Industry of all Nations to be held in London in the year 1851, in order that the Prince might bring the results before the government.' Commissioners were appointed, visits made, and the reports of the results submitted to His Royal Highness, from which it appeared that 65 places, comprehending the most important cities and towns of the United Kingdom, had been visited. Public meetings had been held, and local committees of assistance formed in them."

On the presentation of these reports to the Government the Royal Commission was issued, and on the 11th January, 1850, they held their first sitting, at which it was determined to avail themselves of the arrangement the Society of Arts had reserved for them, and rescind the contract made with Messrs. Munday, relying entirely on voluntary contributions for carrying out the great work. The minute adds:—"The Commissioners feel that in thus abandoning a contract, which, regarded in a pecuniary point of view alone, is undoubtedly advantageous to the public, and resting the success of the proposed experiment upon public sympathy, they have adopted a course in harmony with the general feelings of the community. It now rests with the public to determine, by the amount of their contributions, the character of the proposed Exhibition, and the extent of benefit to industry in all its branches, which will result from it." The Executive Committee did not exactly coincide in their views, probably from a feeling of doubt as to how far public sympathy would supply the necessary means for so gigantic a project, and tendered their resignation in the following terms:—"The members of the Executive Committee submit that the dissolution by the Royal Commission of the contract, which they had been appointed for the purpose of carrying out, has changed the nature of their functions, and even superseded many of them. They are of opinion, therefore, that it is desirable that the Royal Commission should be left as free to select the best organization for carrying their intentions into effect, as if the Executive Committee had never been appointed. They feel that they should not be acting in accordance with their sincere wishes of witnessing the perfect success of the Exhibition, if they did not come forward to express their entire readiness at once to place their position in the hands of his Royal Highness the Prince Albert, and the Royal Commissioners." The resignation was not accepted, and some time elapsed before the executive arrangements were conclusively modified to meet the altered circumstances of the case.

The appeal of the Commissioners to the Country was responded to in the most satisfactory manner. Subscriptions flowed in from all parts of the Kingdom. The Lord Mayor of London called a meeting which was held on the 17th Oct. 1850, at the Egyptian Hall, to receive a deputation of the Society of Arts, who were charged by his Royal Highness Prince Albert to explain the plans proposed for the Great Exhibition. This meeting was attended by a vast number of the most influential merchants, bankers, and traders of London, who



entered most enthusiastically into the proposition. Mr. Cole, in an eloquent speech, explained Prince Albert's views on the subject, and gave a most flattering account of the reception the project had met with amongst the manufacturers in the Provinces. Numerous other meetings in the city and other parts of the metropolis subsequently took place, and the feeling in favour of the International Exhibition appeared all but unanimous. At this important period, and when matters were progressing in the most favourable manner, the Lord Mayor, (now Alderman Sir J. Musgrove) with the view of still further promoting the good cause, conceived the happy idea of inviting the chief magistrates of all the provincial towns to a grand banquet at the Mansion House, the result of which was highly satisfactory, nearly the whole of the Provincial Mayors having attended, and inspired with an almost personal interest in the success of the great undertaking. Prince Albert, who was a guest on the occasion, in a speech of considerable length, and with great good taste and feeling explained his own views on the subject. On the following day a meeting, for business purposes, of those public functionaries who were present at the dinner, took place in the Egyptian Hall, when measures for the advancement of the work were adopted. At a subsequent banquet which took place at York, his Royal Highness Prince Albert said, in the name of the Royal Commission :—

“Although we perceive in some countries an apprehension that the advantages to be derived from the Exhibition will be mainly reaped by England, and a consequent distrust in the effect of our scheme upon their own interests, we must, at the same time freely and gratefully acknowledge, that our invitation has been received by all nations with whom communication was possible, in that spirit of liberality and friendship in which it was tendered, and that they are making great exertions, and incurring great expenses, in order to meet our plans.”

The letters patent for incorporating the Commissioners for the Exhibition of 1851 were issued July 1850, and the Charter accepted August the 15th. No less than £230,000 was subscribed as a guarantee fund by a limited number of gentlemen favourable to the Exhibition, and the Bank of England, on their responsibility, undertook to make the advances as required, although at the time of commencing operations the Commissioners had but £35,000 actually in hand. The Commissioners having determined on the space the edifice was to cover, invited by advertisement architects of all nations to furnish designs, and although only one month was allowed for the preparations of the drawings no less than 233 competitors appeared, one-sixth at least being foreigners. The duty of examining and arranging these plans devolved on Mr. Wyatt, who embodied the particulars in a Report which was duly submitted to the Commissioners. Much discussion ensued thereon, and the Building Committee after repeated sittings came to the conclusion that, tho' many of the Plans were admirable in various respects, not one embodied as a whole the necessary conveniences and arrangements required for such an undertaking, and therefore they were unable to recommend either for adoption. This necessarily caused much dissatisfaction, which was considerably increased when it became known that the Committee had prepared a plan of their own, (which eventually turned out to be of a very incongruous nature,) and that their working drawings were in the Lithographer's hands. Invitations were, however, shortly issued to Contractors to erect the building, the tenders to be delivered by the 10th of May.

Several were sent in, the cost of erection on the plan proposed by the Commissioners varying from £120,000 to £150,000, but the public feeling was soon found to be decidedly against the plan proposed by the Building Committee who were becoming somewhat puzzled what course to adopt when fortunately Mr. Paxton, not by profession an architect, came to their rescue, and produced a plan which as our readers are aware was the one finally adopted. This gentleman was at the time erecting a building for the Victoria Regia, in the Duke of Devonshire's gardens, at Chatsworth; and to that circumstance and to Mr. Paxton alone are we indebted for the origin of that wonderful structure, the renowned Crystal Palace. Little time was lost after the first conception of the idea in preparing the plans which with the aid of Messrs. Fox and Henderson, were soon completed. At first it was intended that the whole of the roof should be flat, but on its being suggested that the Transept should be so arranged as to cover the large elm trees situated on the spot, Mr. Paxton accompanied Mr. Fox to the ground, and in arranging the plan for including those trees hit on the grand idea of a circular roof, which is similar to that on the great Conservatory at Chatsworth, and which has added so materially to the beauty of the structure. Messrs. Fox and Henderson after consulting with those parties on whose co-operation their means of fulfilling their proposals depended, delivered their tenders, which were accepted by the Committee. To simplify matters Mr. Cubitt was invested, on behalf of the Commissioners, with the necessary authority to arrange all details with the Contractors. They obtained possession of the ground on the 30th of July, but the first column was not fixed till the 26th of September, the site being that originally proposed by Prince Albert, consisting of a rectangular piece of ground in Hyde Park, containing about 26 acres, being 2300 feet in length by 500 in breadth. Mr. Fox was employed 18 hours a day for many weeks in preparing the drawings, while his partner Mr. Henderson directed the preparation of the iron work, &c. &c.

*We now quote from Mr. D. Wyatt's account :—* On the ground being given up to the contractors, the first work undertaken was the construction of a hoarding to enclose the whole area of the site. This hoarding was formed by the insertion into the ground, in pairs, of the timbers ultimately to be used as joists. Between each pair of uprights were slipped the ends of boards, to be subsequently used as floor boards; and these were secured by attaching together the two ends of the joists extending above them. Thus the expense of the hire of waste boarding was avoided; the timber composing the hoarding was completely uninjured; and the celerity with which the whole area was surrounded was remarkable. The setting out of the building was then proceeded with, stakes having been driven into the ground to indicate approximately the position of the columns, their precise centres were ascertained by the use of the theodolite, and marked by driving a nail into each stake at the exact point. When it became necessary to remove these stakes, in order to dig out holes for the concrete foundations, an ingenious method was resorted to, for identifying at any time the position occupied by the nail which had been removed. The height of the surface of the mortar, varying with almost every column, was regulated by pegs driven to





INTERIOR OF THE CRYSTAL PALACE,

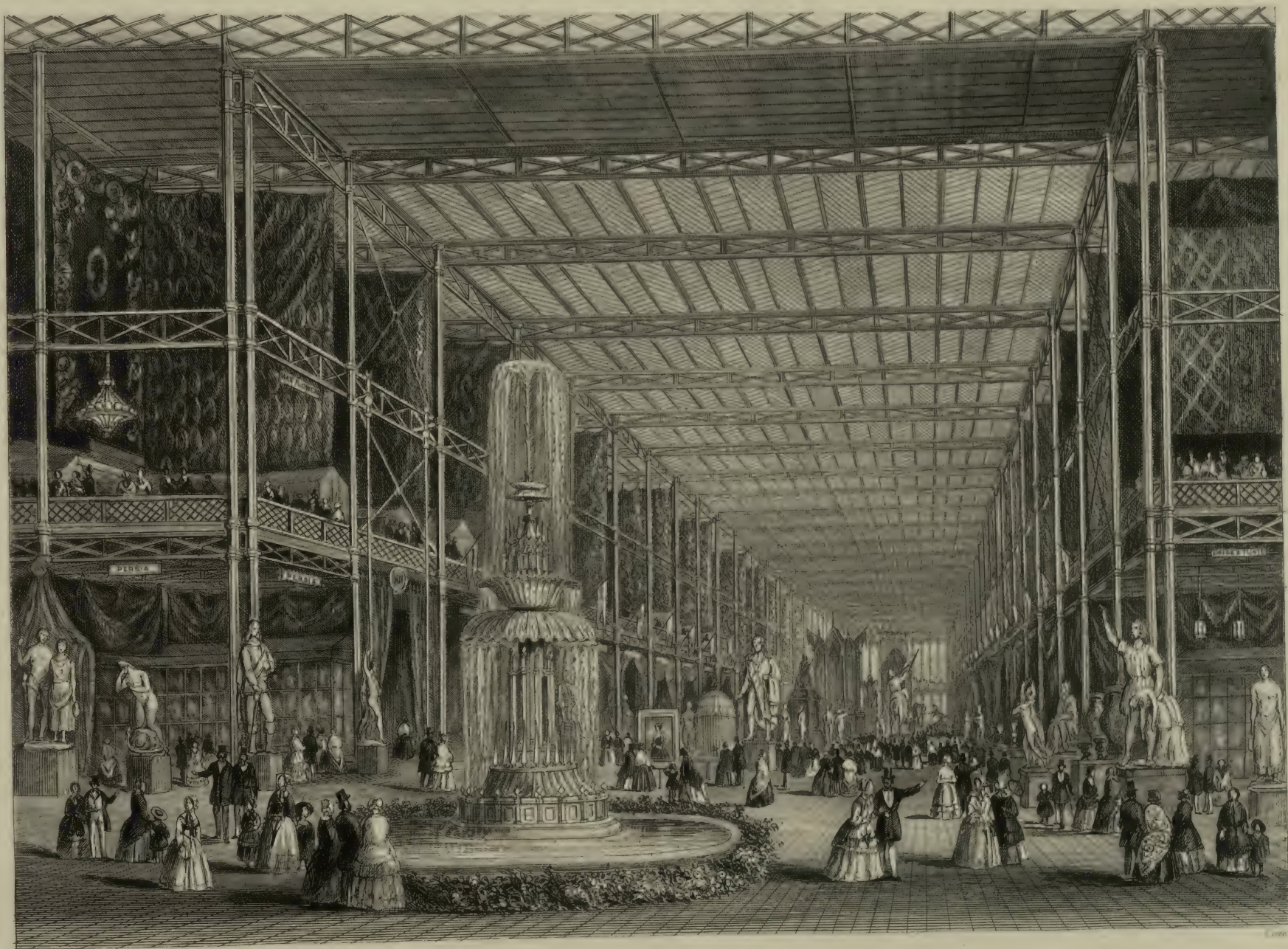
Great Building for International Exhibition, Hyde Park.

Engraved for "Mighty London" from a drawing by J. H. Johnson's Great Hall, Part II.









INTERIOR OF THE GREAT EXHIBITION.

Nº 4.

From Transept looking East.

*Engraved for "Mighty London Illustrated" Read & C<sup>o</sup> 10, Johnson's C<sup>o</sup> Fleet St*







the correct level. As every casting was delivered on the ground, it underwent a careful examination, and was immediately painted. The girders, upon the perfect soundness of which the stability of the galleries and roof mainly depended, were subjected to a rigorous test, in a machine arranged for the purpose. One of Mr. Henderson's patent cranes was so placed, that, on a waggon containing girders being brought beneath its range, a girder was lifted from the waggon and deposited upon a weighing apparatus. An account having been taken of its weight, the girder was again lifted by the crane, and carried forward to an extremely strong frame, the two ends of which corresponded in form and dimensions to the connecting pieces with their projections. The girder being securely confined in these clutches, a force was exerted upon it at the two points upon which the weight of the floors and roofing would have to be carried, that is to say, immediately over its vertical lines. The force thus communicated was applied by two pistons, forced upwards by a modification of the hydraulic press. A registering apparatus affixed to the pipe leading from the force-pump to the testing-machine, afforded the means of adjusting the pressure exercised by the hydraulic press. A careful observation of this apparatus conveyed the assurance, that every girder, according to its ultimate destination, was proved to a strain of either 9, 15, or 22 tons. After testing, the girder was released from its confinement, again raised by the crane, and stacked in a convenient place ready for removal. In order to elevate the columns to their places, what is known in technical language as a pair of shear-legs, was employed. This simple apparatus consists of two poles lashed together at their heads, and maintained in a steady position by ropes extending from the apex of the triangle formed by the base-line of the ground, and the inclination of the poles, to one another, to stakes driven into the ground at a considerable distance. From the apex of the triangle a series of ropes passing over pulleys were suspended perpendicularly; and, by means of this "fall," the majority of the columns, girders, and other heavy portions of the construction, were elevated to their places. Modifications of the simple apparatus described sufficed to hoist almost every part of the necessary iron-work. A connecting piece was attached to each column previous to its elevation; and as soon as two columns with their connecting pieces were fixed, a girder was run up, slipped between the projections of the connecting pieces, and secured in its place. An opposite pair of columns having been similarly elevated, another girder was attached to them; and thus two sides of a square were formed, and maintained in a vertical position by poles acting as supports to them. Two other girders being then hoisted, and slipped between the connecting pieces on the remaining two sides of the squares, a perfect table was constructed. The "shores" or supports were then removed, together with the shear-legs, and the whole apparatus was at liberty, for the purpose recommencing a similar operation in an adjoining 24-feet bay. When a sufficient number of these bays had been completed (starting from the intersection of the Nave and Transept) to warrant the addition, the hoisting of the columns for the first floor was commenced; more lofty shear-legs being of course employed. The extension of the ground-floor structure proceeding, as that of the first-floor was carried on, a base was in turn afforded for the columns of the third tier; and thus the iron framework of the whole building rose from the ground, firm and secure, without involving the necessity of any scaffolding whatever. While these operations of actual structure were being carried on, the work of preparation was yet more vigorously pushed. The Paxton gutters and sash-bars, prepared by ingenious machinery, were got ready by mile lengths. The latter were even painted by mechanical assistance.

While the various machines were busily operating in the preparation of the necessary framework to receive the glass, the makers of the glass were not less actively employed. The large size of the sheets required (4 feet 1 inch by 10 inches), and the short time within which the immense quantity necessary had to be supplied, demanded the employment of numerous additional hands, and workmen had to be sought from abroad to assist in the completion of the order within the requisite time. During the preparation of the materials necessary to commence the construction of the Paxton roofing, active progress had been made in the framing of the wrought-iron trusses requisite to span the central 72-feet nave, and the 48-feet avenues on each side of it. A steam-engine of 6-horse power gave motion to drilling, punching, and cutting-machines. By means of these, the necessary pieces of bar-iron were adjusted to their requisite lengths. While these active preparations for the construction of the roofing were in progress, the daily supplies of castings of every description were of the most abundant nature; no less than 316 girders having been cast and supplied in one week. As fast as the columns came upon the ground, they were taken to their places and immediately fixed. Up to the 20th of September, 77 columns had been supplied. By the week ending the 25th of October, the average number fixed per week amounted to nearly 200, and that rate of supply was continued for several subsequent weeks. The attention of the contractors was next directed to the formation of the transept ribs. The choicest timber was selected for that purpose; their form was set out upon a platform erected for the purpose, and the timbers for the first rib laid down. As supplies of the smaller castings necessary to complete the various portions of the structure poured in, the work of erection and putting together proceeded with wonderful rapidity. The progressive increase in the number of hands employed affords a tolerable indication of the increasing intensity of the work:—In the week ending Sept. 6, 1850, there were 39 men employed; Oct. 4, 419; Nov. 1, 1,476; Dec. 6, 2,220; Jan. 3, 1851, 2,112; and from that time, until within a month of the opening of the Exhibition, the average number rarely fell below 2,000. Towards the beginning of December, the climax of activity was arrived at, and the most trying operation in the whole construction of the building commenced, namely, the hoisting of the main ribs for the great Transept-roof. This commenced on the 4th of December, and the whole sixteen were fixed in one week. It occupied about an hour to raise a pair of ribs from the ground to the level of the lead flat, but the previous preparation involved a much longer space of time. Eleven men worked at each crab, and about 16 were employed on the lead flat, to guide the ribs in their ascent, and see to the safe condition of the shear-legs and tackle. No sooner had the skeleton of the transept-roof been completed than the work of glazing the whole roof commenced. And in this, ingenious machines were employed; one variety of these was capable of accommodating two glaziers; these machines consisted of a stage of deal, about 8 feet square, with an opening in



its centre sufficiently large to admit of boxes of glass, and supplies of sash-bars, putty, &c., being hoisted through it. The stage rested on four small wheels, travelling in the Paxton gutters. The dexterity acquired by the men in working the machines was very remarkable. By means of them, 80 men in one week, put in upwards of 18,000 panes of glass, being not less than 62,600 feet superficial. The greatest number of panes inserted by a man in one day was 108, being 367 feet 6 inches of glazing. Among the later operations connected with the completion of the work, the most remarkable for the celerity with which it was conducted, was the ornamental painting of the nave-roof. Iron straps, attached to the trusses, supported a number of scaffold poles, on which a perfect cloud of boards was laid, and by these means 400 or 500 painters worked their way, from one end of the building to the other.

Various experiments were made as the great work proceeded, to test the strength of the girders, &c., and though at the time great doubts were expressed by many as to the stability of the construction, the scientific gentlemen who were called on to witness those experiments were satisfied the relative proportions of the building were so strong that no danger need be apprehended. To make assurance, however, doubly sure, and to set such doubts wholly at rest, Messrs. Maudsley & Field, the celebrated Civil Engineers, recommended that seven frames should be constructed, each holding thirty-six cannon balls of eighty-six pounds each, equal to seven and a half tons weight, these to be drawn over the floor of the galleries, by which a pressure far greater than could by any other means be brought to bear upon them would be obtained—that of a crowd not exceeding eighty pounds to the square foot. This plan was adopted with the most satisfactory results. During the progress of the work Messrs. Fox & Henderson were indefatigable in their exertions; and had it not been for the untiring energy of those gentlemen, and their perfect confidence in the honour and integrity of the Commissioners, the building could not by any possibility have been finished in time, the contract not having been completed till the 31st of October, at which period, though they had not received any positive orders, and consequently could make no legal claim on the Commissioners, they had incurred an expense of nearly £50,000. The plan of the building forms a parallelogram eighteen hundred and fifty-one feet long and 408 feet wide, with a projection on the north side 938 feet long by 48 feet wide. On each side of the main avenue, which is 72 feet wide by 64 feet high, are again, and parallel with them, at a distance of 48 feet, are second aisles of the same width, having galleries over them on the same level as those on the outside aisles. Bridges span these galleries and connect them together at frequent intervals, the spaces between them forming Courts, the articles exhibited in which were visible from the galleries. These aisles are roofed over at a height of 44 feet from the ground; beyond these aisles, the remaining portion of the building consists of but one story 24 feet high. The magnificent Transept which crosses the grand avenue about midway, and which encloses three elm trees of great height, is 72 feet wide, 108 feet high, and 408 feet long, from north to south. The whole area enclosed and roofed over consists of no less than 772,784 square feet, about 19 acres in extent, being upwards of four times the size of St. Peter's, at Rome. The entrances are at the south Transept, and at the east and west end of the Nave, with numerous places of egress, at convenient distances from each other, throughout the building.

At the east and west ends spaces were enclosed for the exhibition of such goods as, from their dimensions and weight, precluded their admission within the building. They consisted chiefly of blocks of Marble, Coal, Slate, Anchors, Garden ornaments, &c. At the west end, on an open space of ground, was erected the magnificent colossal statue of Richard Coeur de Lion, by the Baron Marochetti (see vignette on title), and at a short distance on the north-west side was constructed an Engine-house, similar in character to that of the main building for generating the steam which gave motion to the machinery. Every necessary arrangement was made for a plentiful supply of water, both for general purposes or for any emergency that might occur. Large spaces on either side of the southern entrance were appropriated to clerks, &c. who conducted the official business; and at each entrance ample accommodation was afforded for the check-takers, vendors of Catalogues, &c.

On the 1st of May (as had been determined on sixteen months before,) the building was completed, and every preparation made for the grand ceremonial which then took place. Her Majesty opened it in person, surrounded by the great officers of State, the ladies and gentlemen of her Court, the Foreign Ambassadors, &c., there being present also not less than 25,000 visitors. Nothing could exceed the magnificence of this grand spectacle; the vast but elegant proportions of the building—the diversity, richness, and beauty of the costumes—the immense assemblage of well-dressed persons who had collected to witness the ceremony—all tended to render its inauguration one of the most imposing sights that had ever been witnessed in England or any other country. Immediately the music which hailed Her Majesty's entrance had ceased, Prince Albert, as President of the Royal Commissioners, read the following Report:—

MAY IT PLEASE YOUR MAJESTY,

WE, the Commissioners appointed by your Majesty's Royal Warrant of the 3rd of January, 1850, for the promotion of the Exhibition of the Works of Industry of all Nations, and subsequently incorporated by your Majesty's Royal Charter of the 15th of August in the same year, humbly beg leave, on the occasion of your Majesty's auspicious visit at the opening of the Exhibition, to lay before you a brief statement of our proceedings to the present time.





INTERIOR OF THE GREAT EXHIBITION.

No 5

From the Transept looking West.

Engraved for "Mighty London Illustrated," Read & Co. 10, Johnson's Ct Fleet St









INTERIOR OF THE GREAT EXHIBITION.

No 6.  
American Department, (East End.)

Engraved for "Mighty London Illustrated" and C<sup>o</sup> D. Johnson's C<sup>o</sup> Print S<sup>t</sup>







By virtue of the authority graciously committed to us by your Majesty, we have made diligent inquiry into the matters which your Majesty was pleased to refer to us, namely, into the best mode of introducing the productions of your Majesty's Colonies and of Foreign Countries into this Kingdom, the selection of the most suitable site for the Exhibition, the general conduct of the undertaking, and the proper method of determining the nature of the prizes, and of securing the most impartial distribution of them. In the prosecution of these inquiries, and in the discharge of the duties assigned to us by your Majesty's Royal Charter of Incorporation, we have held constant meetings of our whole body, and have, moreover, referred numerous questions connected with a great variety of subjects to Committees, composed partly of our own members and partly of individuals distinguished in the several departments of science and the arts, who have cordially responded to our applications for their assistance at a great sacrifice of their valuable time. Among the earliest questions brought before us was the important one as to the terms upon which articles offered for exhibition should be admitted into the building. We considered that it was a main characteristic of the national undertaking in which we were engaged that it should depend wholly upon the voluntary contributions of the people of this country for its success; and we therefore decided, without hesitation, that no charge whatever should be made on the admission of such goods. We considered, also, that the office of selecting the articles to be sent should be intrusted in the first instance to Local Committees, to be established in every foreign country, and in various districts of your Majesty's dominions, a general power of control being reserved to the Commission. We have now the gratification of stating that our anticipations of support in this course have in all respects been fully realized. Your Majesty's most gracious donation to the funds of the Exhibition was the signal for voluntary contributions from all, even the humblest classes of your subjects, and the funds which have thus been placed at our disposal amount at present to about £65,000. Local committees, from which we have received the most zealous co-operation, were formed in all parts of the United Kingdom, in many of your Majesty's Colonies, and in the territories of the Hon. East India Company. The most energetic reports have also been received from the Governments of nearly all the countries of the world, in most of which Commissions have been appointed for the special purpose of promoting the objects of an exhibition justly characterised in your Majesty's Royal Warrant, as an Exhibition of the Works of Industry of all Nations.

We have also to acknowledge the great readiness with which persons of all classes have come forward as exhibitors. And here, again, it becomes our duty to return our humble thanks to your Majesty for the most gracious manner in which your Majesty has condescended to associate yourself with your subjects, by yourself contributing some most valuable and interesting articles to the Exhibition. The number of exhibitors whose productions it has been found possible to accommodate, is about 15,000, of whom nearly one-half are British. The remainder represent the productions of more than forty foreign countries, comprising almost the whole of the civilized nations of the globe. In arranging the space to be allotted to each, we have taken into consideration both the nature of its productions and the facilities of access to this country afforded by its geographical position. Your Majesty will find the productions of your Majesty's dominions arranged in the western portion of the building, and those of foreign countries in the eastern. The Exhibition is divided into four great classes of—1. Raw Materials; 2. Machinery; 3. Manufactures; and 4. Sculpture and the Fine Arts. A further division has been made according to the geographical position of the countries represented; those which lie within the warmer latitudes being placed near the centre of the building, and the colder countries at the extremities. Your Majesty having been graciously pleased to grant a site in this your Royal park for the purposes of the Exhibition, the first column of the structure now honoured by your Majesty's presence was fixed on the 26th of September last. Within the short period, therefore, of seven months, owing to the energy of the contractors, and the active industry of the workmen employed by them, a building has been erected, entirely novel in its construction, covering a space of more than eighteen acres, measuring 1,851 feet in length, and 456 feet in extreme breadth, capable of containing 40,000 visitors, and affording a frontage for the exhibition of goods to the extent of more than 10 miles. For the original suggestion of the principle of this structure, the Commissioners are indebted to Mr. Joseph Paxton, to whom they feel their acknowledgements to be justly due, for this interesting feature of their undertaking.

With regard to the distribution of Rewards to deserving Exhibitors, we have decided that they shall be given in the form of Medals, not with reference to merely individual competition, but as rewards for excellence in whatever shape it may present itself. The selection of the persons to be so rewarded has been intrusted to Juries equally composed of British subjects and of Foreigners, the former having been selected by the Commission from the recommendations made by the Local Committees, and the latter by the Governments of the Foreign Nations, the productions of which are exhibited. The names of these Jurors, comprising as they do many of European celebrity, afford the best guarantees of the impartiality with which the Rewards will be assigned. It affords much gratification that, notwithstanding the magnitude of this undertaking, and the great distance from which many of the articles now exhibited have had to be collected, the day on which your Majesty has been graciously pleased to be present at the inauguration of the Exhibition, is the same day that was originally named for its opening, thus affording a proof of what may, under God's blessing, be accomplished by goodwill and cordial co-operation among nations, aided by the means that modern science has placed at our command. Having thus briefly laid before your Majesty the results of our labours, it only remains for us to convey to your Majesty our dutiful and loyal acknowledgements of the support and encouragement which we have derived throughout this extensive and laborious task, from the gracious favour and countenance of your Majesty. It is our heartfelt prayer that this undertaking, which has for its end the promotion of all branches of human industry, and the strengthening of the bonds of peace and friendship among all nations of the earth, may, by the blessing of Divine Providence, conduce to the welfare of your Majesty's people, and be long remembered among the brightest circumstances of your Majesty's peaceful and happy reign.



## HER MAJESTY REPLIED

I receive with the greatest satisfaction, the Address which you have presented to me on the opening of this Exhibition. I have observed with a warm and increasing interest the progress of your proceedings in the execution of the duties intrusted to you by the Royal Commission, and it affords me sincere gratification to witness the successful result of your judicious and unremitting exertions in the splendid spectacle by which I am this day surrounded. I cordially concur with you in the prayer, that by God's blessing this undertaking may conduce to the welfare of my people and to the common interests of the human race, by encouraging the arts of peace and industry, strengthening the bonds of union among the nations of the earth, and promoting a friendly and honourable rivalry in the useful exercise of those faculties which have been conferred by a beneficent Providence for the good and the happiness of mankind.

His Grace the Archbishop of Canterbury having offered up a Prayer, invoking God's blessing upon the undertaking, Her Majesty proceeded along the building in Royal Procession, and on returning to the platform declared the Exhibition opened. The ceremony then terminated with the performance of the Hallelujah Chorus.

From this period to the close was one continued triumph, thousands upon thousands daily visiting the building; and so admirably were all the arrangements planned and carried out that not a single incident occurred to mar the proceedings. To attempt to give any description of the works of art, the treasures of wealth, and the examples of ingenuity which this wonderful structure contained, is far beyond the limits our space will admit. To those desirous of a detailed account we bid them obtain the Official Catalogue, wherein their curiosity and desire for information will be amply satisfied. On Saturday, Oct. 11th, 1851, the public took their last farewell of the Great Exhibition and all its glories. On the 15th it was officially closed, Prince Albert, the Royal Commissioners, and the Exhibitors with their friends only, being present. The day, unhappily, was most inauspicious, rain descending in ceaseless torrents from early dawn until the close of night. The Building, however, was crowded, no obstacle standing in the way of those desirous of witnessing the closing scene. In the Transept, on the site of the Crystal Fountain which was removed, a dais covered with crimson cloth was raised, and on it stood the Ivory Throne belonging to the Indian collection. In front of the Throne was placed a Table, covered with crimson drapery; and round it several ornamental chairs, which were occupied by the Commissioners. At a short distance were placed rows of benches, the front seats being occupied by the more distinguished visitors, and gentlemen of the Press, and behind these the Jurors, Exhibitors, and their friends, congregated. Viscount Canning commenced proceedings by reading a Report on presenting the awards of the Juries to the Royal Commission. At the conclusion of this Report, Prince Albert, in the name of the Royal Commissioners, delivered an address, expressive of their thanks to the Jurors, for their admirable and impartial judgements, and to all parties connected with the Exhibition for their hearty good will and assistance in carrying out the great work; expressing at the same time a hope, that the interchange of knowledge, resulting from a meeting of enlightened people in friendly rivalry, might be dispersed far and wide over distant lands; and that, by shewing our mutual dependance on each other, it might be a means of promoting unity among nations, and peace and goodwill among the various races of mankind. On resuming his seat the Prince was greeted with loud cheers. The organs having pealed forth a verse of the National Anthem, the Lord Bishop of London offered up a prayer, thanking the Almighty for the success which had attended this great international undertaking, after which the Choir, aided by the Organs, having performed the Hallelujah Chorus, the ceremony terminated and the vast concourse of visitors shortly after separated.

Thus closed the Great Industrial Exhibition of all Nations. It has accomplished its noble destiny, and now takes up its proud position in the history of the nineteenth century, as the most novel and unprecedented of the grand events of the past.

We may here mention that the total number of visitors from the 1st of May to the 11th of October was 6,063,986. The receipts taken at the doors, £356,757 12s.; Sale of Season Tickets, £67,610 14s.; Subscriptions, £67,399 3s. 10d.; Miscellaneous receipts, £13,339 15s. 9d.; making a grand total of £505,107 5s. 7d.

The honor of Knighthood has since been most justly conferred on Mr. Paxton, the Architect; Mr. Cubitt, the Engineer; and Mr. Fox, the Contractor.





INTERIOR OF THE GREAT EXHIBITION.

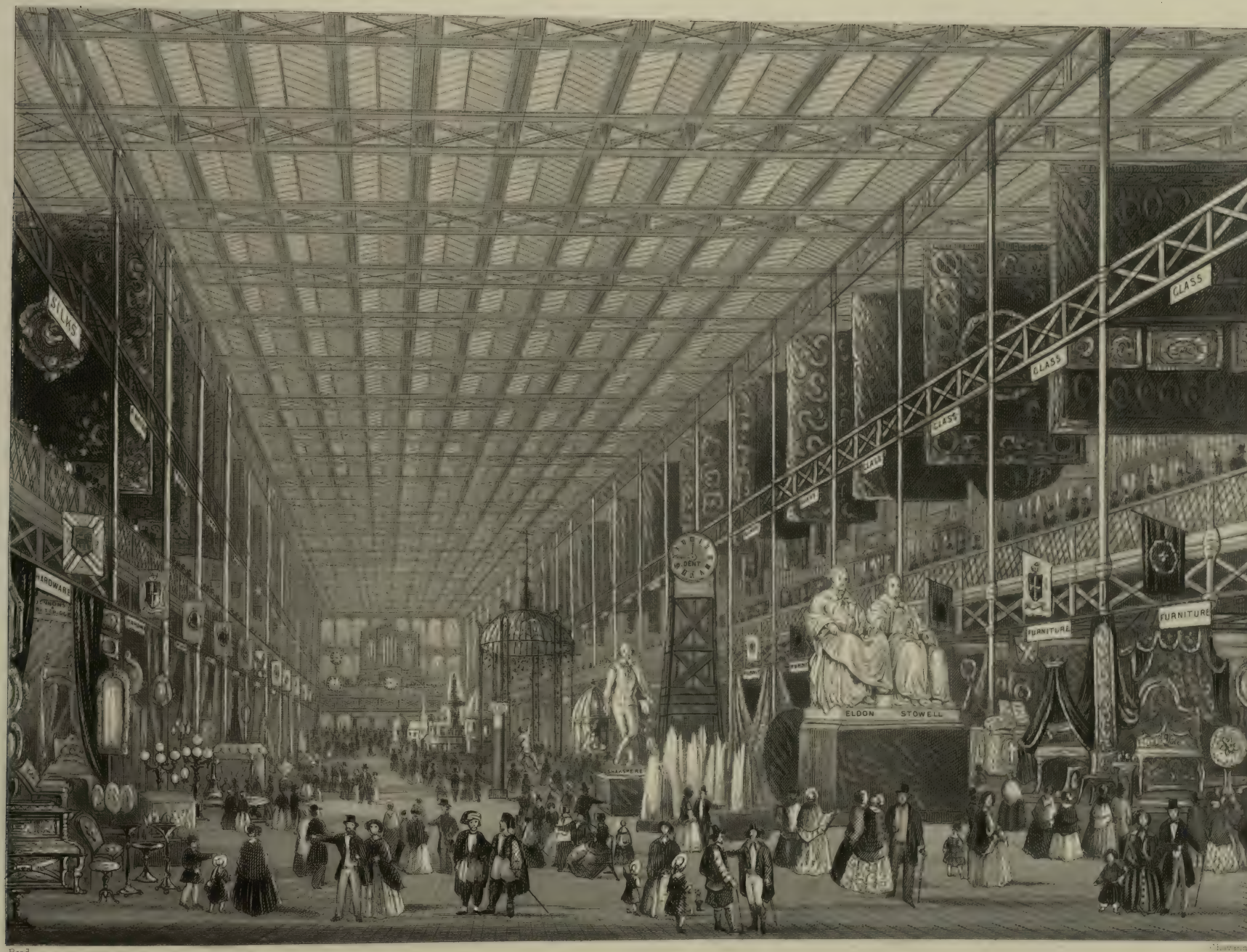
South Entrance.

Engraved for "The Illustrated London News" by J. H. Johnson & Co. London.









INTERIOR OF THE GREAT EXHIBITION.

Nº 8.

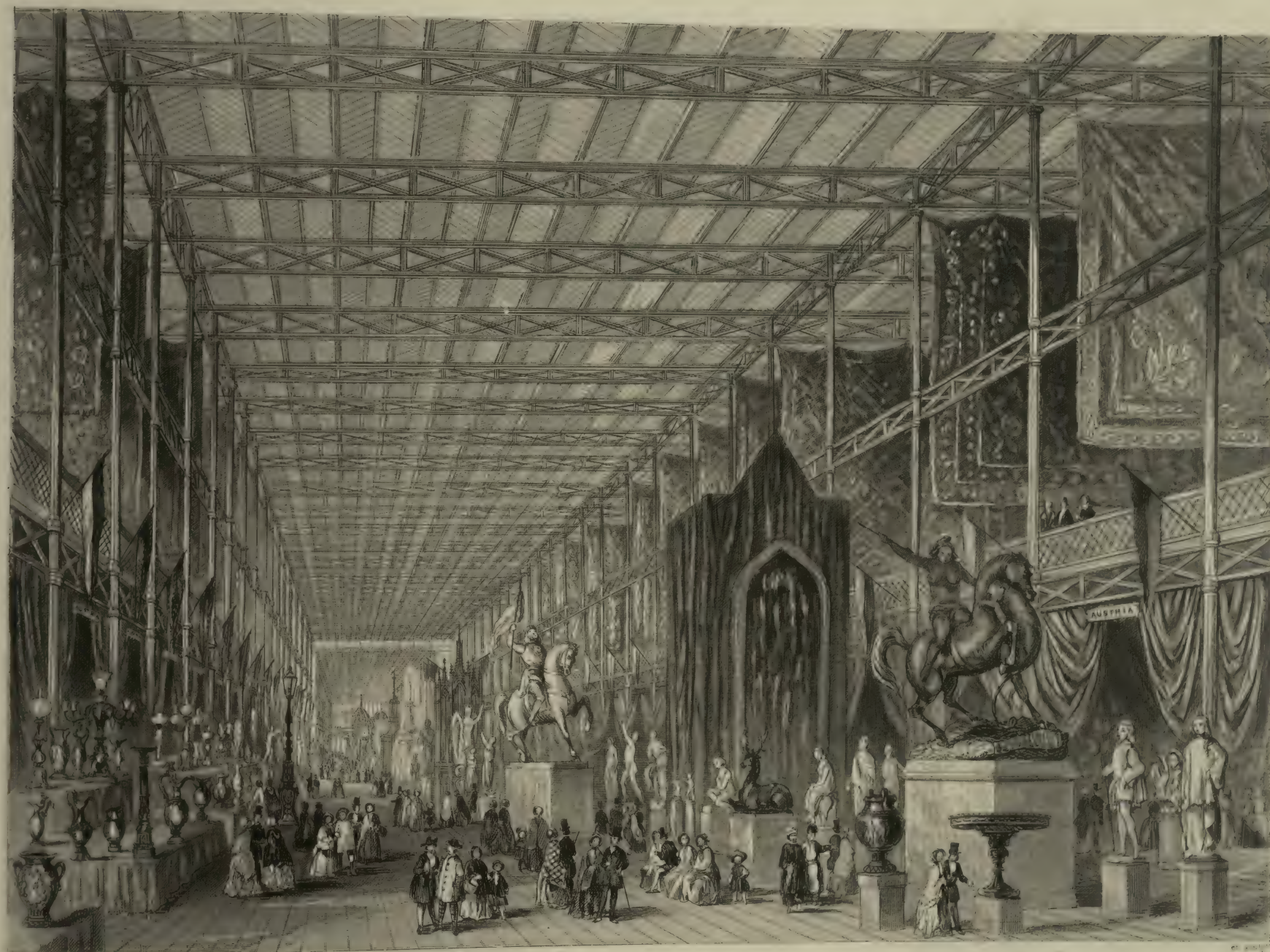
British Department.

*Engraved for "Mighty London Illustrated." Read & C<sup>o</sup> 10, Johnson's C<sup>o</sup> Fleet St*









INTERIOR OF THE GREAT EXHIBITION.

Nº 9.

From Dante's Temple.

*Engraved for "Mighty London Illustrated" Read & C<sup>o</sup> 10, Johnson's C<sup>o</sup> Fleet St*















